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Before the
**FEDERAL COMMUNICATIONS COMMISSION**
Washington, D.C. 20554



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| In the Matter of | ) | |
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| Inquiry Concerning the Deployment of | ) | |
| Advanced Telecommunications | ) | |
| Capability to All Americans in a | ) | CC Docket No. 98-146 |
| Reasonable and Timely Fashion, and | ) | |
| Possible Steps to Accelerate Such | ) | |
| Deployment Pursuant to Section 706 of | ) | |
| the Telecommunications Act of 1996 | ) | |

# COMMENTS OF THE WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, INC.

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## EXECUTIVE SUMMARY

As previously recognized by the Commission, fixed wireless is an essential component of the Commission's broad strategy to accelerate deployment of ubiquitous, cost-efficient broadband services. Accordingly, as the principal trade association for the fixed wireless broadband industry, the Wireless Communications Association International, Inc. ("WCA") has a direct and substantial interest in this proceeding and in any rules, policies or recommendations to Congress that may arise therefrom.

All available evidence reflects that fixed wireless providers are committed to making the enormous investments necessary to fulfill Chairman Kennard's vision of widely available, high-speed Internet access for all consumers. The Commission has already seen deployment of fixed wireless service offerings to the business market in the 24 GHz and 39 GHz bands. As has been confirmed by the recent entry of MCI WorldCom and Sprint into the fixed wireless industry, use of MDS and ITFS frequencies at 2.15 GHz and 2.5 GHz will drive even more widespread deployment of fixed wireless broadband service over the next several years and beyond. If the Commission is serious about promoting widespread deployment of broadband services, particularly into residential, rural and other markets that cannot receive xDSL or cable modem service, it is absolutely critical that the Commission assure MDS/ITFS providers that they will be fully protected from displacement by or interference from existing and future users of the 2 GHz band, including but not limited to IMT-2000 terrestrial and satellite mobile telecommunications systems.

Moreover, the vast potential of fixed wireless broadband service cannot be realized if the Commission's rules and policies do not promote head-to-head competition on a fair and nondiscriminatory playing field. Consistent with the Commission's recognition that a pro-competitive, deregulatory framework is essential to ensure continued expansion of broadband services in the marketplace, WCA reiterates its call for the Commission to exercise its Title II forbearance authority under Section 10 of the Telecommunications Act of 1996 where necessary to unshackle fixed wireless providers with no market power from unnecessary regulation. Moreover, widespread deployment of advanced telecommunications capability cannot be achieved if fixed wireless broadband providers are not accorded protection from third-party entry barriers. In that regard, WCA urges the Commission to adopt WCA's proposal in the "Competitive Networks" docket to amend the antenna preemption rule (Section 1.4000) so that it protects *all* fixed wireless antennas one meter in diameter or diagonal measurement, and not just those designed to receive video programming service via MDS, ITFS, LMDS, DBS or off-air television. For similar reasons, WCA supports the Commission's proposal to adopt a variety of other measures in that proceeding that are designed to provide fixed wireless providers with fair and nondiscriminatory access to rooftop areas, inside wiring and riser conduit in multi-tenant environments.

Finally, the Commission should eliminate arbitrary or counterproductive spectrum usage limitations on fixed wireless broadband providers. Although the Commission has taken significant steps toward adapting its rules to the post-convergence era, fixed wireless providers continue to be burdened by a hodgepodge of inconsistent, service-specific regulatory requirements that are not imposed on their competitors, resulting in precisely the sort of regulatory disparity which imposes unreasonable barriers to entry and defeats the pro-competitive policies enunciated by Congress in the 1996 Act.

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**COMMENTS OF THE WIRELESS COMMUNICATIONS ASSOCIATION INTERNATIONAL, INC.**

The Wireless Communications Association International, Inc. ("WCA"), by its attorneys, hereby submits its comments in response to the Commission's *Notice of Inquiry* ("*NOI*") in the above-referenced proceeding.[1/]

## I. INTRODUCTION

WCA is the principal trade association of the fixed wireless broadband communications industry. Its membership includes a wide variety of Commission licensees, wireless broadband telecommunications system operators, equipment manufacturers and consultants interested in the domestic deployment of spectrum at 2.1 GHz, 2.3 GHz, 2.5 GHz, 18 GHz, 24 GHz, 28 GHz, 31 GHz and 38 GHz allocated generally to the Multipoint Distribution Service ("MDS"), Wireless Communications Service ("WCS"), Instructional Television Fixed Service ("ITFS"),

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[1/] *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, FCC 00-57, CC Docket No. 98146 (rel. Feb. 18, 2000) *("NOI")*.

Digital Electronic Message Service ("DEMS"), Local Multipoint Distribution Service ("LMDS") and Private Operational Fixed Service ("OFS") for the provision of fixed wireless broadband telecommunications and multichannel video programming services. WCA's members thus have a direct and substantial interest in this proceeding and any regulatory actions or recommendations to Congress that may arise therefrom.

There is little question that fixed wireless industry is an essential component of what Chairman Kennard has called "the next frontier of data and the Internet," *i.e.*, broadband networks.[2/] As noted by one analyst, "[t]he growth of Internet traffic is creating a need for increased bandwidth in the local loop, which is a major driver of the market for broadband fixed wireless technologies."[3/] Indeed, it has been estimated that U.S. market for broadband fixed wireless services will skyrocket from $767 million in 1999 to $7.4 billion by 2003,[4/] and that the

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[2/] *See* Remarks by William E. Kennard, Chairman, Federal Communications Commission, before the Federal Communications Bar, Northern California Chapter, San Francisco, California (July 20, 1999) ("These fat 'pipes' can bring data, video, and audio to you in lightening-quick speeds. They are the foundation upon which the future business plans that are sitting on desks and night stands across Silicon Valley are based. Broadband is the future of the Internet.").

[3/] "The Broadband Fixed Wireless Services Market Gains Momentum, According to IDC," *PR Newswire* (Dec. 13, 1999). *See also* Werbach, "Digital Tornado: The Internet and Telecommunications Policy," OPP Working Paper Series 29, at 73 (March 1997) ("The Internet is only useful to people if they are able to access it, and the value of the Internet is, to an increasing extent, dependent on the level of bandwidth available to end users. Thus, issues of service availability and affordability, especially with regard to services that provide higher bandwidth than analog POTS lines, will be central to the development of the Internet as a mass-market phenomenon that benefits all Americans.").

[4/] "The Broadband Fixed Wireless Services Market Gains Momentum, According to IDC," *PR Newswire* (Dec. 13, 1999).

total number of fixed wireless broadband subscribers will increase from 200,000 this year to 9.4 million in 2005,[5/] fulfilling the promise envisioned by Chairman Kennard:

> Wireless has the potential to bring the best of the Information Age to every home and business, to not only complement wireline services, but to bring more services. To be something more and better than wireline. I envision a day when new technologies will enable consumers to use wireless to transport information, entertainment and educational services anywhere in America, and indeed the world. A day when wireless is responsible for providing many of the services that are now only provided by wired networks, and some completely new applications that can only be provided with wireless.[6/]

Importantly, fixed wireless technology utilizing the MDS and ITFS spectrum at 2150-2162 MHz and 2500-2690 MHz is particularly well-suited for extending broadband services to the residential, rural or otherwise underserved areas that are the focus of the *NOI*.[7/] Dale Hatfield, Chief of the Commission's Office of Engineering and Technology, has observed that:

> [I]f this Nation is to enjoy the full, pro-competitive, deregulatory, and universal service benefits envisioned by the passage of the Telecommunications Act of 1996, we need *wireless* systems as full-fledged competitors in the provision of local telecommunications services. In particular, we need them not only in the

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[5/] Smith, "Wireless Rides To The Rescue," *Wireless Week*, at 16 (Feb. 7, 2000).

[6/] Remarks by William E. Kennard, Chairman, Federal Communications Commission, to the Personal Communications Industry Association of America, Orlando, Florida (Sept. 23, 1998).

[7/] *See, e.g., NOI* at ¶ 3 ("[T]here is a growing concern that Americans living in rural areas and inner cities might not have access to advanced services that are comparable to services available to people living in other areas. A lack of broadband infrastructure could limit the potential of these communities to attract and retain businesses and jobs, especially businesses that are dependent on electronic commerce."); Remarks of William E. Kennard, Chairman, Federal Communications Commission, to the National Association of Regulatory Utilities Commissioners (NARUC), San Francisco, California (July 19, 1999) ("Some companies have said that rural America will never be fully connected because the economies just aren't there. The fact is that some rural Americans do have access to advanced services, while others do not.").

provision of broadband services to business customers, but also on a widespread basis to ordinary residential customers as well.[8/]

Although cable modems and xDSL services currently are the predominant means through which consumers obtain high-speed access to the Internet, there is every indication that these two technologies cannot meet the demand for broadband in underserved areas by themselves.[9/] Conversely, as noted by the Commission, "fixed wireless systems can often be constructed in less time, at lower cost, and in smaller increments than wireline networks, especially where the

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[8/] "The Regulatory Challenges of New Wireless Technologies: Ultrawideband and Software Defined Radios," Keynote Address at 1999 IEEE Radio and Wireless Conference, at 3 (delivered Aug. 2, 1999) (emphasis in original).

[9/] The need for cable operators to upgrade their plant for two-way capability (particularly in less densely populated areas) and the business strategies of the large cable MSOs suggest that cable modem service will not be ubiquitously available. *See* "Broadband! - A Joint Industry Study by Sanford C. Bernstein & Co., Inc. and McKinsey & Company, Inc.," at 25-26 (January 1999) ("The nature of smaller and more rural systems -- often with less access to capital; less threat of competition; and less dense and, therefore, more expensive plant to upgrade -- keeps our forecast for [non-MSO] systems at about 15% upgraded. . . It's worth pointing out that many of the cable upgrades to date appear to be targeted at the most attractive neighborhoods (*i.e.*, high densities and high household incomes). On a homes-passed basis, we estimate that about 60% (12 million) of all high-income households in the U.S. are passed by upgraded cable plant."). Similarly, ubiquitous DSL service is impeded by factors that include "loop length (if loops are too long), presence of non-DSL compatible remote terminal technology (such as nearly all the legacy variety of digital loop carrier systems) as well as other aspects of deployed line electronics, such as load coils and bridge taps." *Id.* at 25. As a result, it has been estimated that existing telephone plant is "DSL capable" in only 44% of the residential market. *Id.* at 26. *See also* "Next-Generation Networks Exploit Last-Mile Bandwidth," *TR's Last-Mile Telecom Report* (Feb. 24, 2000) <http://www.tr.com/newsletters/lmtr/sample.html> (quoting officer of Bell Atlantic Network Services as referring to DSL as an "interim strategy"); Cauley, "For Phone Companies Wiring the Web, a Surprising Speed Bump," *The Wall Street Journal*, at B1 (Feb. 17, 2000).

cost of wireline links is especially high."[10/] Commissioner Tristani recently spoke of how that fixed wireless service, particularly that provided via MDS/ITFS frequencies, will usher the broadband revolution into rural and smaller markets:

> In addition to wireline solutions, many observers believe that wireless technologies offer great promise as a broadband solution in smaller cities and rural areas. They note that while new wireline infrastructure in rural areas is very expensive, a wireless solution can offer a cost effective entry strategy that can be used for rapid market entry.
>
> A multitude of fixed wireless broadband services are currently being deployed or are in the planning stages. While some are more targeted to an urban environment, others provide the necessary range and technical capability for deployment in rural areas. One example is [MDS/ITFS] or wireless cable. It offers the potential to provide broadband access to underserved markets.[11/]

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[10/] *Promotion of Competitive Networks in Local Telecommunications Markets*, 14 FCC Rcd 12673, 12684 (1999). *See also* Statement of Thomas Sugrue, Chief, Wireless Telecommunications Bureau, before the Subcommittee on Telecommunications, Trade and Consumer Protection, United States House of Representatives, re: Access to Buildings and Facilities by Telecommunications Providers (May 13, 1999) ("Because their technology enables them to avoid the installation of new wireline networks, wireless service providers may be among those with the greatest potential quickly and efficiently to offer widespread competitive facilities-based services to end users."); Dawson, "Wireless Ops Learn to Love Net," (March 6, 2000) <http://www.multichannel.com/b3.shtml> (reporting statement by CEO of AT&T Wireless Group that "economics strongly [favor] adding fixed services to the company's existing wireless infrastructure, given the fact that two-thirds of fixed service costs are incurred only when paying customers are signed up"); Beckman, "Appetite for Bandwidth Driving Fixed Wireless Market," *Global Wireless*, at 14 (October 1999) ("What took decades to build in developed countries - - a telecommunications infrastructure - - will take a matter of months or years to build with fixed wireless technologies, and a variety of service providers and hardware vendors are positioning themselves to capitalize on what is expected to be significant industry."); Whelan, "Wireless Broadband Offers Promise - - And Volatility," *Barron's Online* (April 20, 1999) ("The advantages of broadband wireless - - particularly a newer technology called point-to-multipoint - - are that it has about ten times the capacity of DSL, but with none of DSL's distance limitations, and it can be installed more quickly and economically.").

[11/] "Deploying Broadband More Broadly: Working Together to Roll-out Access in America's Small Cities and Rural Areas," Remarks of Commissioner Gloria Tristani to the New Mexico

It cannot be emphasized enough that, as noted by Chairman Kennard, spectrum is the "lifeblood" of wireless service.[12/] Thus, it is of grave concern to WCA that the fixed wireless industry remains exposed to a risk of losing valuable spectrum in the MDS/ITFS bands at 2.15 and 2.5 GHz to proponents of terrestrial and satellite mobile IMT-2000 systems. Although WCA is pleased that the United States has opposed any international mandate that the 2150-2162 MHz and 2500-2690 MHz bands be set aside solely for IMT-2000 systems, the Commission must make clear as soon as possible that it does not intend to displace fixed wireless broadband providers in favor of new IMT-2000 service providers. Simply put, there is ample spectrum for third generation mobile services in the United States (including the existing cellular and PCS allocations and the spectrum at 746-764 MHz, 776-794 MHz and 2110-2150 MHz that is about to be auctioned) without having to impact the MDS/ITFS allocation that is best suited for providing fixed broadband services. For the same reasons, it is equally imperative that the Commission act with dispatch in protecting MDS/ITFS providers from potential interfering uses of the 2 GHz band by, among others, providers of satellite services and proponents of RF lighting devices in the 2.4 GHz Industrial, Scientific and Manufacturing ("ISM") band.

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Communications Network Symposium, Albuquerque, New Mexico (Nov. 10, 1999) (<http://www.fcc.gov/Speeches/Tristani/spgt919.html>).

[12/] Remarks of William E. Kennard, Chairman, Federal Communications Commission, to the Cellular Telecommunications Industry Association, New Orleans, Louisiana (February 28, 2000).

Finally, to ensure that the Commission remains on the pro-competitive regulatory course originally charted by Congress in the Telecommunications Act of 1996 ("the 1996 Act"), the Commission can and should do the following:

- affirm that where a fixed wireless broadband provider is deemed to be providing "telecommunications service," the Commission will exercise its authority under Section 10 of the 1996 Act to forbear from imposing inappropriate Title II regulation unless it determines that the fixed wireless broadband provider is capable of wielding market power;
- eliminate third-party barriers to market entry that are delaying aggressive deployment of fixed wireless broadband services, particularly in multi-tenant environments; and
- remove arbitrary or counterproductive limitations on how fixed wireless providers may deploy their spectrum.

## II. DISCUSSION

### A. THE COMMISSION MUST ACT DECISIVELY TO PROTECT MDS/ITFS PROVIDERS FROM DISPLACEMENT BY OR INTERFERENCE FROM EXISTING AND FUTURE USERS OF THE 2 GHZ BAND.

To fully understand the magnitude of the harm that will befall the fixed wireless industry and consumers if MDS/ITFS spectrum is not fully protected from incursions, it is important to first review the critical role that MDS/ITFS providers will play in the growth and development of fixed wireless broadband service throughout the United States.

There is little question that MDS/ITFS will drive widespread deployment of fixed wireless broadband service over the next several years and beyond.[13/] As the Commission is

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[13/] *See, e.g.*, Cisco Press Release, "Cisco Drives Industry Standards for Broadband Wireless Internet Services," at 2-3 (Oct. 26, 1999) <biz.yahoo.com/bw/991026/ca_cisco_s_1.html>

aware, MDS and ITFS spectrum is already being used in several markets across the country for the provision of high-speed Internet access and other broadband services, achieving precisely what the Commission envisioned when it amended its rules in MM Docket No. 97-217 to give MDS and ITFS licensees the flexibility to provide two-way video, voice and data services via the 2.15 and 2.5 GHz bands.[14/] Indeed, the Commission has already recognized that "many wireless cable companies have begun to focus on offering high-speed Internet access and telephony instead of television programming, and have shown early success in these endeavors."[15/] As noted in the Commission's first Section 706 Report to Congress:

> In a significant number of cities, so-called "wireless cable," MDS, or MMDS companies are using spectrum around 2 GHz to offer broadband services to residential consumers. These cities include not only New York City and the San Francisco Bay area, but also such smaller cities as Jackson, Mississippi (population 196,637), and Sherman, Texas (population 31,601). One estimate is

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(quoting statement of Yougsoo Ryu, Executive Vice President, Samsung: "[MMDS] standardization dramatically changes the global availability of broadband Internet services. By eliminating requirements for wireline networks from the service provider to the home, we will accelerate the introduction and adoption of broadband services throughout the world"; statement of Dr. Henry Samueli, co-founder, Broadcom: "We consider this technology innovative and clearly capable of accelerating universal access to wireless broadband Internet services worldwide.").

[14/] *See Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, 13 FCC Rcd 19112 (1998).

[15/] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, 14 FCC Rcd at 10145, 10259-60 (1999); *see also id.* at 10271-2 (listing some of the early broadband wireless services deployed over MDS/ITFS frequencies).

> that several million residential consumers could now obtain broadband from such companies.[16/]

But the current smattering of systems represents just the proverbial tip of the iceberg. As noted above, one recent study estimates that the total number of fixed wireless broadband subscribers will grow from 200,000 this year to 9.4 million in 2005.[17/] The study further estimates that MDS operators will hold a 70% share of those subscribers in five years, and thus will become the predominant choice for fixed wireless broadband throughout the United States.[18/] The growth potential of MDS/ITFS broadband service is attributable in no small part to the superior propagation characteristics at 2.15 GHz and 2.5 GHz which allow MDS/ITFS licensees to serve less densely-populated areas at lower cost. The Commission has recognized that:

> [Wireless operators using MDS/ITFS] do not have the rain-fade, propagation and high-equipment cost problems that LMDS licensees experience. Thus, MMDS could be positioned as a service provider for work-at-home or single-office/home-office markets.[19/]

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[16/] *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996,* 14 FCC Rcd 2398, 2428 (1999).

[17/] Smith, "Wireless Rides To The Rescue," *Wireless Week*, at 16 (Feb. 7, 2000).

[18/] *Id.*

[19/] *Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band to Reallocate the 29.5 - 30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Service,* CC Docket No. 92-297, FCC 99-379, at ¶ 39 (rel. Dec. 13, 1999). *See also* Dawson, "Broadband Wireless: A Question of Frequency," *Inter@ctive Week* (available at <http://www.zdnet.com/filters/printerfriendly/0,6061,2388683-35,00.html>) ("MMDS is one of several fixed wireless spectrums used for Internet access. Another common spectrum is LMDS, or *Local Multipoint Distribution System.* The key difference is that LMDS covers a

The recent $2 billion in investment in MDS/ITFS by MCI WorldCom and Sprint is perhaps the most powerful evidence that MDS/ITFS will be an essential vehicle for delivery of broadband access in the new millennium.[20/] In their pending merger application, MCI WorldCom and Sprint have advised the Commission that they intend to use MDS spectrum to become "a facilities-based competitor -- independent of the telephone and cable incumbents -- capable of providing a full range of services."[21/] The Commission's staff has likewise recognized that "MMDS systems complement [the MCI WorldCom/Sprint long distance] networks, for they provide the last-mile connection to businesses and residences. Once the networks of MMDS and IXCs become fully integrated, the IXCs will have greater control of the end-to-end transmission and will be able to provide broadband services to subscribers more efficiently."[22/] As noted by MCI WorldCom and Sprint, the resulting benefits to consumers will be exponential:

> It is important to note that the new WorldCom's vision is not simply stand-alone broadband to each customer. Broadband capability for consumers, small businesses and large businesses greatly enhances the value of the advanced services technology above its value to any one user - - a classic demonstration of

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smaller radius than MMDS. As a result, LMDS is more expensive to deploy, since more transmission towers are needed to cover an area.").

[20/] *See, e.g.*, "MCI WorldCom Widens Wireless Footprint," *Communications Today*, at 1 (July 21, 1999); Felps, "Broadband Players Tip Hand," *Wireless Week*, at 3 (July 19, 1999).

[21/] *Applications of Sprint Corporation, Transferor, and MCI WorldCom, Transferee, for Consent to Transfer Control*, CC Docket No. 99-333, at 81-84 (filed Nov. 17, 1999) (the "*MCI WorldCom-Sprint Transfer Application*").

[22/] Lathen, "Broadband Today - A Staff Report to William E. Kennard, Chairman, Federal Communications Commission," at 30 (October 1999).

> network effects. Wide deployment of broadband services to residential and small businesses as well as large business users enables networked multimedia applications, such as Sprint ION, that efficiently link employees, customers and external partners by providing virtually unlimited bandwidth to all locations - - including work-at-home and single offices. This will facilitate e-commerce to create new markets, interactive distance learning for employees and students at all locations, access to a telecommuting and geographically dispersed workforce, and real-time video desktop collaboration at multiple locations. MCI WorldCom and Sprint will thus be addressing key consumer and commercial needs, including personal use, work at home, and business networks requiring access to small businesses.[23/]

In the short time since entering the MDS/ITFS industry, Sprint and MCI Worldcom have continued the investments necessary to attain nationwide deployment of ubiquitous, high-speed fixed wireless broadband service to all market segments. Sprint has successfully deployed its first generation fixed wireless broadband service in the Phoenix market.[24/] The company reportedly plans to launch a similar service in several more markets in the coming months, with a goal of serving up to 20 markets by year end.[25/] MCI WorldCom has just announced that it is initiating trials of its fixed wireless broadband service in Jackson, Mississippi; Baton Rouge,

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[23/] *MCI WorldCom-Sprint Transfer Application* at 92-93. *See also* Prepared Testimony of John W. Sidgmore, Vice Chairman, MCI WorldCom, before the Senate Committee on Commerce, Science and Transportation, reprinted in *Federal News Service* (Nov. 8, 1999) ("Sprint is going forward with the introduction of its Integrated On Demand network (ION) in Kansas City, Seattle, Denver, and eventually, in local markets across the country. MCI WorldCom will be collocated in 1500 central offices for DSL by the end of this year and 2000 by next year. We have both invested heavily in a fixed wireless technology known as MMDS that will allow us to get to customers who are beyond the reach of DSL . . . . With these MMDS and DSL assets, combined with the Sprint ION networks and local facilities, we're in a very strong position to bring consumers urban and rural -- the broadband access they need and want.").

[24/] *See Kagan Broadband*, at 1 (March 8, 2000).

[25/] *See Kagan, supra* n.24; McGinty, "MCI, Sprint to Trial Wireless Net Service Unveiled," *Inter@ctive Week* (March 2, 2000) <http://www.zdnet.com>.

Louisiana; and Memphis, Tennessee.[26/] It is anticipated that MCI WorldCom will launch more advanced trials of its fixed wireless broadband service in Boston and Dallas later this year.[27/] In total, the merged MCI WorldCom/Sprint entity reportedly plans to offer fixed wireless broadband service in more than 100 cities by the end of 2001.[28/]

And, of course, Sprint and MCI Worldcom will not be alone. Nucentrix Broadband Networks, Inc. has recently announced that it will soon commence trials of Cisco System's VOFDM technology in Austin, TX, and plans to have broadband MDS/ITFS systems operating in 20 markets by the end of 2001.[29/] In addition to the many smaller companies that are already providing high-speed Internet access services over MDS and ITFS spectrum, scores of others are planning to secure two-way MDS and ITFS authorizations once the Commission opens its initial window for the filing of applications for upstream facilities.

As the Commission considers the future of the 2.15 GHz and 2.5 GHz bands, it must also remember that many operators will continue to use a combination of MDS stations and leased excess ITFS capacity to provide multichannel video programming service in competition with

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[26/] *See, e.g.,* Borland, "MCI Worldcom States High-Speed Wireless Trials," *CNET News.com* (March 9, 2000) <http://dailynews.yahoo.com/h/cn/20000308/tc/20000308037.html>; "MCI WorldCom Tests Wireless Web Access in 3 Cities," *Bloomberg News* (March 7, 2000) <http://www.cnetinvestor.com>.

[27/] *Id.*

[28/] *See Kagan, supra* n.24.

[29/] *See* Smith, "Laying The New Broadband Foundation," *Wireless Week*, at 24 (Feb. 28, 2000).

incumbent cable systems (often in conjunction with a high-speed Internet access service).[30/] For example, BellSouth Corporation holds MDS/ITFS channel rights covering approximately 3.5 million homes in several large markets in Florida, and in Atlanta, New Orleans and Louisville.[31/] The company has already launched digital wireless cable service in Atlanta, New Orleans and Orlando, and has begun providing that service in Jacksonville and Daytona Beach.[32/] Similarly,

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[30/] *See* Breznick, "A Wireless Explosion," *Cable World*, at 1, 123 (Dec. 6, 1999) (quoting Bob Wright, president/CEO of NBC, as saying that he expects to see "tremendous development of wireless as a delivery vehicle for TV programming"). The Commission has long acknowledged that notwithstanding the growth of DBS, incumbent cable operators remain the dominant providers of multichannel video programming. *See, e.g., Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, CS Docket No. 99-230, FCC 99-418, at ¶ 5 (rel. January 14, 2000) (stating that cable controls 82% of all subscribers to multichannel video programming services in the United States); *Rulemaking to Amend Parts 1,2,21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, CC Docket No. 92-297, FCC 99-379, at ¶ 30 (rel. Dec. 13, 1999) ("[W]hile there has been increased entry into the MVPD services market, the incumbents continue to hold dominant positions."); "The Changing Status of Competition to Cable Television," United States General Accounting Office, Report to the Subcommittee on Antitrust, Business Rights, and Competition, Committee on the Judiciary, United States Senate, GAO/RCED-99-158, at 1 (July 1999) ("[T]he cable industry maintains a high share of the subscription television market nationally and is currently not very competitive.").

[31/] *See* Comments of BellSouth Corporation *et al.*, CS Docket No. 99-363, at 2 (filed Jan. 12, 2000) (the "BellSouth Retransmission Consent Comments").

[32/] *See, e.g.*, "BellSouth Introduces Wireless Digital TV Service in Orlando," BellSouth News Release (Oct. 15, 1998) <http://www.bellsouthcorp.com>; "Wireless Crossroads: Digital, Data and Telephony," *Cable World*, at 93 (June 29, 1998); Kanell, "'We Were Deluged All Day Long,' - Hopeful Customers Flood Switchboard for BellSouth's Wireless TV Service," *Atlanta Journal Constitution*, at F1 (June 5, 1998); Schofield, "Rolling Out Digital Wireless Cable," *Wireless Voice Video Data*, at 27 (May/June, 1998).

GTE Corp. is offering a digital wireless cable service in Honolulu.[33/] Moreover, MDS operators remain a vital source of competitive multichannel video service in smaller markets and rural areas where cable overbuilds and/or DBS "local into local" service are likely to remain unavailable for the foreseeable future.[34/] Indeed, operators such as CNI Wireless (Somerset, Kentucky), W.A.T.C.H. TV (Lima, Ohio), CFW Cable (Charlottesville, Virginia), and WHTV Broadcasting Corp. (San Juan, PR) have long been and continue to be the only *bona fide* competition to incumbent cable operators in their respective markets. And, those operators are moving aggressively to maintain their competitive positions. W.A.T.C.H. TV, for example, is about to expend several million dollars to convert its video transmission facilities to digital technology in order to free spectrum for a companion high-speed Internet access service. Given Congress's ongoing concern as to the lack of multichannel video competition in more sparsely populated areas, the need to preserve the competitive viability of these entities should not be underestimated.[35/]

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[33/] *See* Hogan, "GTE Steps Up Marketing Efforts in Hawaii," *Multichannel News*, at 34 (July 20, 1998) (discussing GTE's wireless cable system in Honolulu).

[34/] *See, e.g.,* Remarks of Rep. Rick Boucher, 145 Cong. Rec. H2319 (daily ed. Apr. 27, 1999) ("I am concerned, however, that the business plans of the [DBS] carriers that have announced an interest in offering the local-to-local services extend only to the largest 67 out of 211 local television markets around the country. Under this plan, most of rural America simply will not receive the benefit of this local-into-local service."; Breznick, "DBS vs.Cable," *Cable World*, at 170 (Dec. 13, 1999) ("Even if DirecTV and EchoStar land all the [local] station rights, they'll end up blanketing no more than 60% of the nation's households with local signals in a year. Currently, DirecTV just has enough orbital slots to beam local stations to the top 24 markets while even spectrum-rich EchoStar only has enough slots to serve 33 big cities.").

[35/] *See, e.g.,* Remarks of Rep. Christopher B. Cannon, 145 Cong. Rec. H2320 (daily ed. April 27, 1999) ("Unfortunately, . . ., many [in rural Utah] still do not have access to local network

Equally important, ITFS licensees use the 2.5 GHz band to provide video, voice and data-based educational services to schools and other receive locations. Today, over 70,000 locations serve as registered ITFS receive sites, and it is estimated that the number of actual locations at which ITFS programming is viewed may be many times that.[36/] ITFS stations are currently utilized for a wide variety of services, including the provision of formal telecourses (on the K-12, secondary, and post-secondary levels) to schools, hospitals, workplaces and other places of learning; transmission of other educationally valuable programming (such as news, public affairs and similar material) into schools; provision of professional and worker training (such as for teachers, health professionals and public safety officers); and transmission of teleconferences for educational, training and administrative purposes. Moreover, there is substantial enthusiasm within the educational community for utilizing ITFS capacity to provide schools with Internet access at speeds far in excess of that available with dial-up service. In addition, the deployment of high-speed MDS/ITFS-based Internet access services will provide residential and small-business consumers with the opportunity to access a wide variety of educational materials being

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programming. This means they cannot be informed about their communities and State without installing an antenna or other additional equipment, and even then a clear signal is difficult. Rural residents should have the same convenient access to television programming as those who live in urban areas."); "Potential for Cable Overbuilds Grows With Size of Market and Services Provided, The Strategis Group Reports," *Strategis Group Press Release* (March 8, 2000) <http://www.Strategisgroup.com/press/pubs/overbuild.html> ("[C]able overbuilds in small markets do not make sense for either public or private overbuilders. Medium market overbuilds appear highly questionable at best; while in large markets there appears some potential, albeit slim, to construct a competing system.").

[36/] According to a recent analysis of the Commission's database of ITFS authorizations, there are approximately 1268 ITFS licensees, holding licenses under 2180 different call signs, for 8,054 ITFS channels nationwide.

made available by ITFS licensees and other educators over the World Wide Web. Because of the favorable propagation characteristics at 2.5 GHz, these benefits are uniquely available to ITFS.

Unfortunately, most or all of these public interest benefits could be eliminated in short order if the Commission does not take proactive measures to ensure that existing or proposed uses of spectrum in and around the 2.15 and 2.5 GHz band do not displace or cause harmful interference to MDS/ITFS providers. As the Commission is aware, WCA has made its views known on this issue in its comments on a variety of pending Commission proceedings and via direct contacts with the Commission's staff. Since WCA's positions are a matter of public record, they need not be reiterated in detail here. The following is an overview of some of WCA's most pressing concerns *vis a vis* protection of MDS/ITFS spectrum:

**WRC-2000**: WCA applauds the progress that the Commission, the National Telecommunications and Information Administration and the Department of State have made in crafting a position with respect to Agenda Item 1.6.1 for the 2000 World Radiocommunications Conference ("WRC-2000") in Istanbul later this year – the agenda item looking to identify spectrum for IMT-2000 mobile services.[37] A representative of WCA served as an active member of the fifteen-member industry/government group created by Ambassador Schoettler that drafted the position paper the U.S. delegation is promoting to other nations in

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[37] *See, e.g.,* Letter from Paul J. Sinderbrand, Counsel for The Wireless Communications Association International, Inc., to Donald Abelson, Chief, International Bureau, re: Draft Proposal for the Work of the Conference, Agenda Item 1.6.1 - Document USA-IMT (Rev. 8), at 1 (Dec. 3, 1999) (the "WCA WRC-2000 Letter").

advance of WRC-2000.[38/] WCA is pleased that the U.S.'s draft proposal relating to Agenda Item 1.6.1 continues to reflect opposition to any international mandate that the 2150-2162 and 2500-2690 MHz bands be set aside solely for IMT-2000 systems. WCA believes that the U.S. position properly balances the desire of other nations to weigh the merits of allocating additional spectrum to IMT-2000 against a recognition that many nations will realize substantial benefits from use of the MDS/ITFS bands for the provision of broadband services. In a spirit of compromise and to provide other nations the ability to make their own determinations, the MDS/ITFS community has been willing to accept an international identification of 2500-2690 MHz as a candidate band for advanced communications applications, including IMT-2000 systems, provided that such identification is accompanied by a clear, unambiguous pronouncement that the identification has no regulatory impact, and that administrations retain the flexibility to preserve existing uses of the band, provide for new non-IMT-2000 use of the band, or allow the use of the band for IMT-2000 services.[39/]

WCA has previously submitted extensive information demonstrating that the 2500-2690 MHz band is so extensively utilized in the United States that it cannot, as a practical matter, be cleared as part of any effort to reserve spectrum for IMT-2000 services.[40/] WCA was pleased

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[38/] *See WCA Press Release*, "WCA Comments World Radio Conference Process On IMT-2000 (Feb. 17, 2000) <http://www.wirelesscabl.com>.

[39/] The MDS/ITFS community has also insisted that the U.S. position treat the 1.7 GHz band in similar fashion to the 2.5 GHz band.

[40/] Absent identification of the spectrum to which existing users of MDS/ITFS spectrum would be relocated, WCA cannot provide a precise estimate of relocation costs. However, assuming that relocation would be to proximate bands below 3 GHz, and after accounting for the nearly

that the Commission's recent *Policy Statement* on spectrum reallocation recognized the importance of MDS/ITFS services and refrained from any suggestion that the MDS/ITFS bands might be set aside solely for IMT-2000 or otherwise diverted from their current usage.[41/] WCA therefore urges that as the Commission soon begins its examination of the possibility of identifying additional spectrum for IMT-2000, the Commission should make clear that in the United States, the 2150-2162 MHz and 2500-2690 MHz bands will not be reallocated, eliminating any possible misunderstanding by IMT-2000 proponents.

**IB Docket 99-81 (The 2165-2200 MHz MSS Proceeding)**: In its *Notice of Proposed Rulemaking* in IB Docket No. 99-81, the Commission has proposed to adopt service and technical rules to govern Mobile Satellite Service ("MSS") use of portions of the 2 GHz band, including the 2165-2200 MHz band that is just above the 2150-2162 MHz MDS allocation.[42/] The Commission specifically sought comment on two issues that WCA had previously raised

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one million existing subscribers served by MDS/ITFS providers and the embedded equipment base, WCA estimates that relocation would involve total equipment replacement costs of at least $500 million to $1 billion. WCA WRC-2000 Letter at 10. These costs would increase significantly if equipment would need to be developed for the identified relocation spectrum, or if the spectrum has significantly less suitable propagation characteristics, requiring increased infrastructure. *Id.*

[41/] *See Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium*, FCC 99-354 (rel. Nov. 22, 1999). Although the *Policy Statement* acknowledged that NTIA has identified the unlicensed portions of the ITFS band for possible auction, the amount of spectrum at issue is minimal, since all ITFS channels have been licensed in most areas of the country other than the most rural. And, even then, the *Policy Statement* refrained from suggesting that the currently-unlicensed ITFS channels should be set aside solely for IMT-2000.

[42/] *The Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, 14 FCC Rcd 4843 (1999).

– the potential for interference from MDS to poorly-designed MSS mobile handsets receiving the 2165-2200 MHz band, and the potential for interference to MDS due to MSS out-of-band emissions. In its comments and reply comments in IB Docket No. 99-81 and in its *ex parte* contacts with the Commission's staff, WCA proposed that as the newcomer, MSS systems be required to accept any interference they receive from MDS facilities which operate in compliance with the spectral mask and power limitations recently adopted in MM Docket No. 97-217.[43/] In addition, WCA argued that the spectral mask proposed by the FCC was inadequate and proposed a fairer alternative.[44/] For the reasons set forth in WCA's filings, WCA believes that adoption of its proposals is essential to ensure that users of MDS spectrum will not suffer harmful interference from MSS operations, and that the Commission therefore should incorporate WCA's recommendations into any rules adopted for MSS providers in IB Docket No. 99-81.

**RM-9740 (Satellite Out-of-Band Emissions)**: On November 19, 1999, the Commission released a *Public Notice* soliciting comments on a July 1, 1999 letter from Motorola Satcom, Teledesic and Hughes Space & Communications requesting revisions to the Commission's rules that restrict out-of-band emissions by satellite systems. As noted in WCA's responsive

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[43/] *See* Comments of The Wireless Communications Association International, Inc., IB Docket No. 99-81 (filed June 24, 1999); Reply Comments of The Wireless Communications Association International, Inc., IB Docket No. 99-81 (filed July 26, 1999); *Ex Parte* Letter from Paul J. Sinderbrand, Esq., Counsel for The Wireless Communications Association International, Inc., re: IB Docket No. 99-81 (filed Nov. 5, 1999).

[44/] *See* Comments of The Wireless Communications Association International, Inc., IB Docket No. 99-81, at 7-9 (filed June 24, 1999); Reply Comments of The Wireless Communications Association International, Inc., IB Docket No. 99-81, at 3-4 (filed July 26, 1999).

comments, WCA believes that the Commission should revise Section 25.202 of its rules, which in its current form is woefully inadequate in protecting fixed terrestrial services from out-of-band emissions emanating from satellites.[45/] For the reasons set forth in WCA's comments and reply comments, WCA believes that the Commission should:

- reject any effort to craft a "one size fits all" approach to the development of satellite spectral masks, since out-of-band emissions limitations for any particular satellite service must be carefully tailored to protect existing and future terrestrial uses of nearby spectrum;[46/]
- deny any proposal that it merely defer to recommendations of the International Telecommunications Union ("ITU") for the development of out-of-band emissions limitations on satellite services;[47/]
- revise Section 25.202(f) so that it limits out-of-band satellite emissions to an absolute level and considers the aggregation of out-of-band emissions from all contributing satellite signals;[48/] and,
- permit interested parties to address the out-of-band emissions problem via creation of an informal working group rather than through a formal rulemaking proceeding.[49/]

**ET Docket No. 98-42 (RF Lighting)**: As reflected in a recent *ex parte* filing by Sprint Corporation in ET Docket No. 98-42, the MDS/ITFS community has concerns regarding the

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[45/] Comments of The Wireless Communications Association International, Inc., RM-9740, at 2 (filed Dec. 20, 1999).

[46/] *Id.*

[47/] *Id.* at 3.

[48/] *Id.* at 4.

[49/] Reply Comments of The Wireless Communications Association International, Inc., RM-9740, at 4-7 (filed Jan. 20, 2000).

proposal of Fusion Lighting, Inc. ("Fusion") to deploy high-power RF lamps operating in the 2.4 GHz ISM band.[50] In particular, the 2.4 GHz magnetrons that would be permitted under the Fusion proposal will have adverse effects on the use of MDS/ITFS spectrum in the adjacent 2500-2690 MHz band to provide fixed wireless broadband services.[51] While WCA is pleased that Fusion has recently submitted a petition for further rulemaking attempting to address other concerns regarding its proposal,[52] WCA is disappointed that Fusion has not made any effort to address the incompatibility between its proposal and MDS and ITFS operations at 2.5 GHz.

**ET Docket No. 95-18 (2110-2150 MHz Band Reallocation)**: While WCA has applauded the Commission's proposal in the *Memorandum Opinion and Order and Third Notice of Proposed Rule Making and Order* in ET Docket No. 95-18[53] to reallocate the 2110-2150 MHz band for a new, flexible use Advanced Mobile and Fixed Communications Service ("AMFCS"), WCA has expressed concern that the proposed rules do not adequately protect against interference to MDS licensees in the immediately adjacent 2150-2162 MHz band.[54] To address that failure, WCA has proposed specific technical rules designed to provide adequate

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[50] *See* Letter from Paul J. Sinderbrand, Counsel for Sprint Corporation, ET Docket No. 98-42 (filed Dec. 17, 1999).

[51] *Id.* at 2.

[52] *See* Petition for Further Rulemaking of Fusion Lighting, Inc., ET Docket No. 98-42 (filed Mar. 1, 2000).

[53] 13 FCC Rcd 23949 (1998).

[54] *See* Comments of The Wireless Communications Association International, Inc., ET Docket No. 95-18 (Filed Feb. 3, 1999).